

2022 Ozone Plan for Attainment of the 2015 Federal 8-Hour Ozone Standard

Public Workshop

April 27, 2021

webcast@valleyair.org

Purpose of Today's Workshop

Present information on the development of the upcoming attainment plan to address the 2015 8-hour ozone standard, including

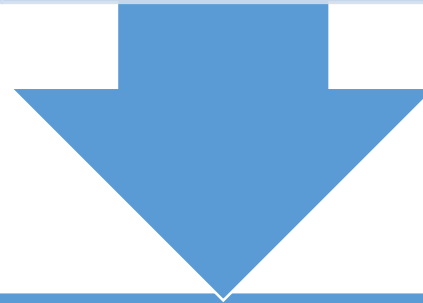
Ozone formation in the Valley and progress

Federal 8-hour ozone standards

Planning process

Plan development timeline

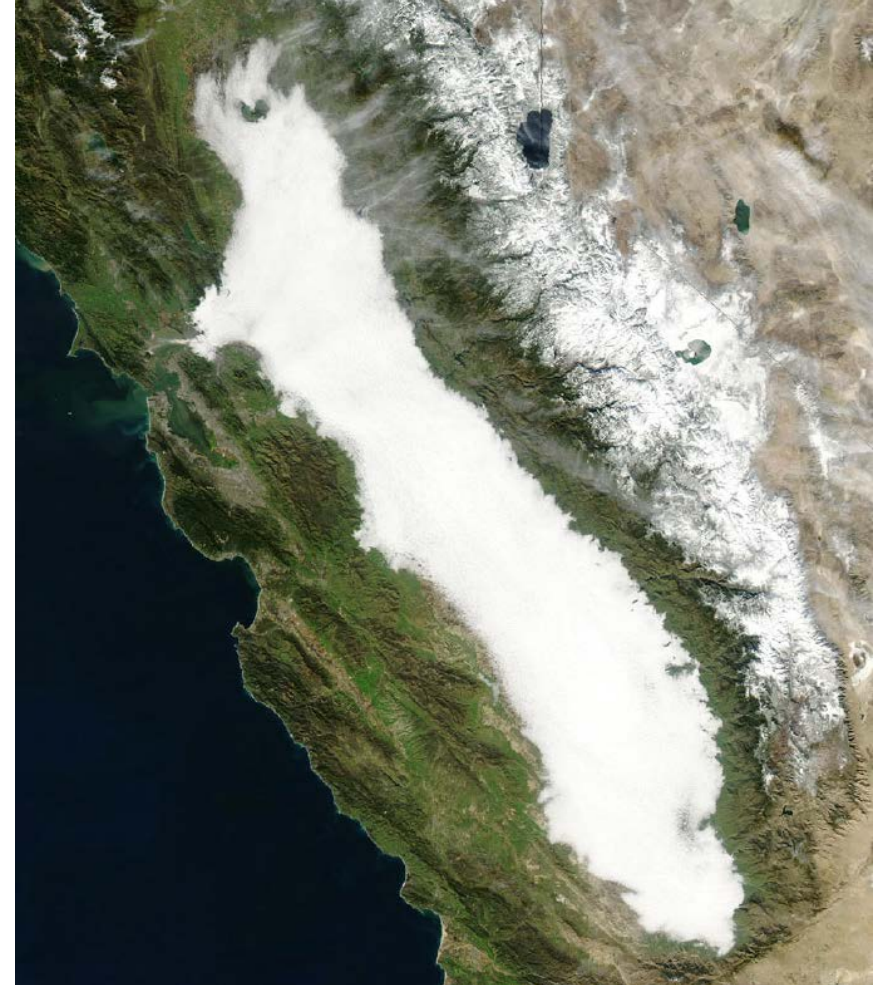
Public engagement



Receive comments from the public

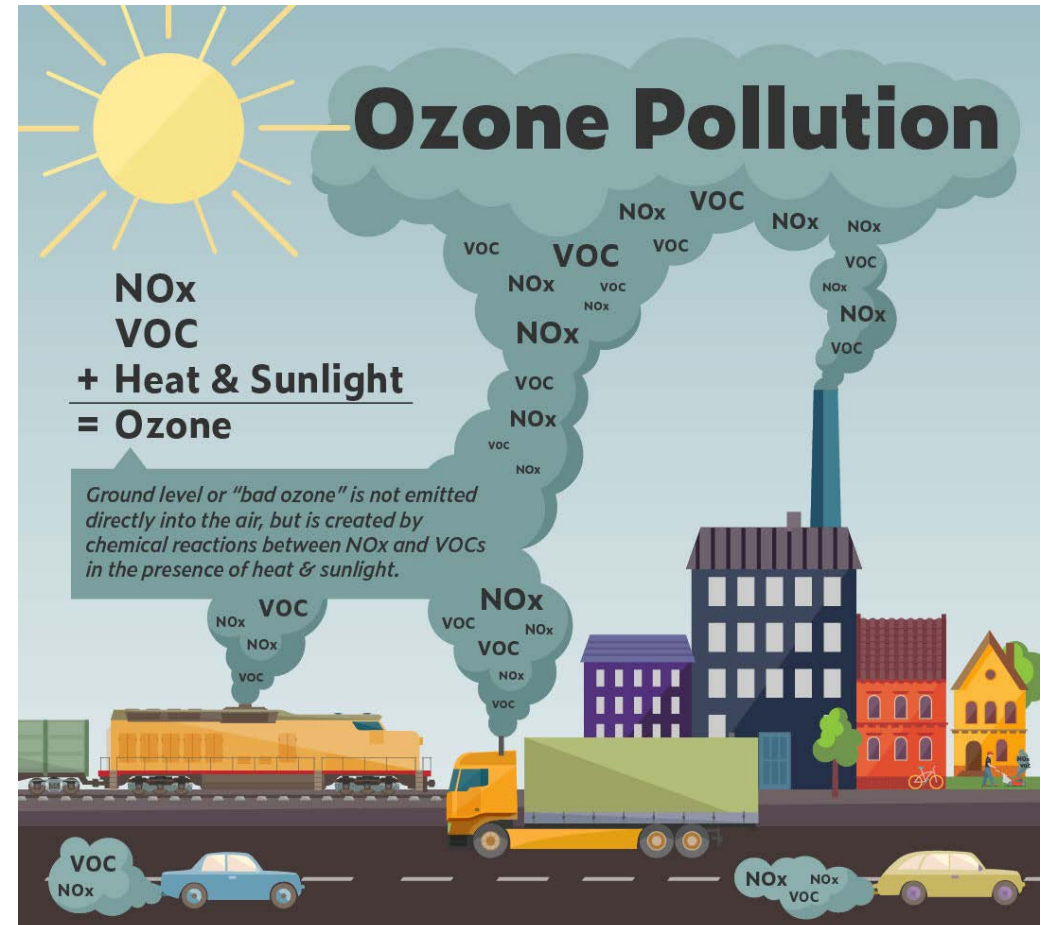
Valley's Air Quality Challenges

- Valley's challenges in meeting federal air quality standards unmatched due to unique combination of topography and meteorology
- Valley faced with variety of challenges including role as major goods movement corridor, high population growth, pollution transport from other areas, wildfires
- 20 of 30 most disadvantaged California communities located within the San Joaquin Valley



Ozone Formation

- Ozone is formed through reaction of NO_x and VOCs in presence of heat/sunlight
 - NO_x: combustion primarily from mobile sources
 - VOCs: biogenic, consumer, stationary, mobile sources
- Valley experiences high ozone in the summer, with peaks in the afternoon

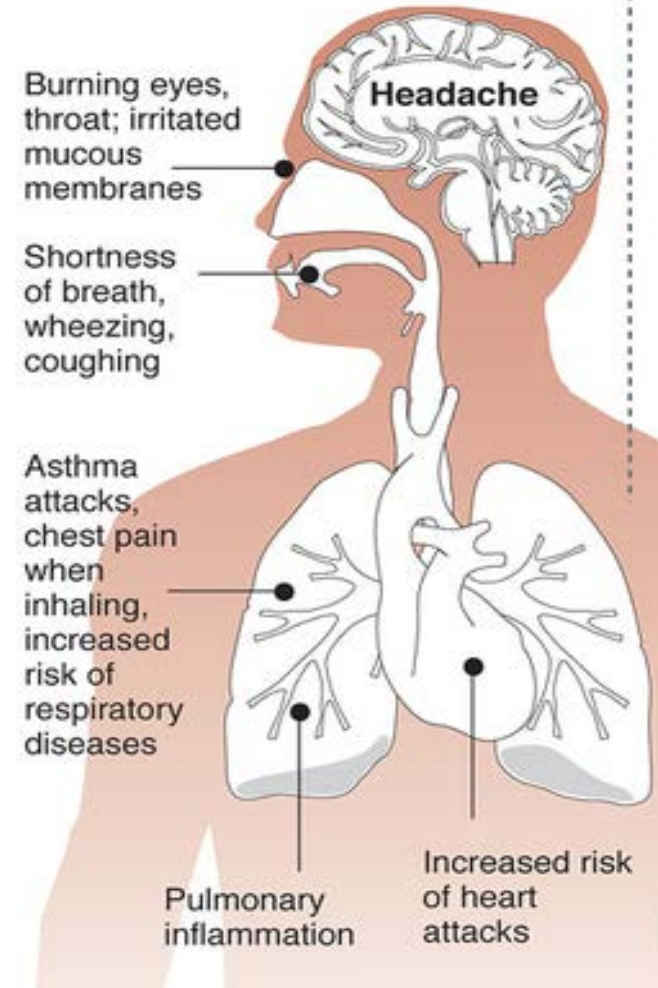


Industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors and chemical solvents are major sources of oxides of nitrogen (NO_x) and volatile organic compounds (VOC).

Ozone Impacts on Public Health

- Ozone most significantly impacts people with asthma, children, older adults, and outdoor workers
- Exposure to ozone causes coughing, throat irritation, pain, burning, or discomfort in the chest, chest tightness or shortness of breath
 - Ozone impacts lung function and aggravates existing respiratory conditions, such as asthma and COPD
 - Leads to increased medication use, emergency visits and hospital admissions

Effects on health

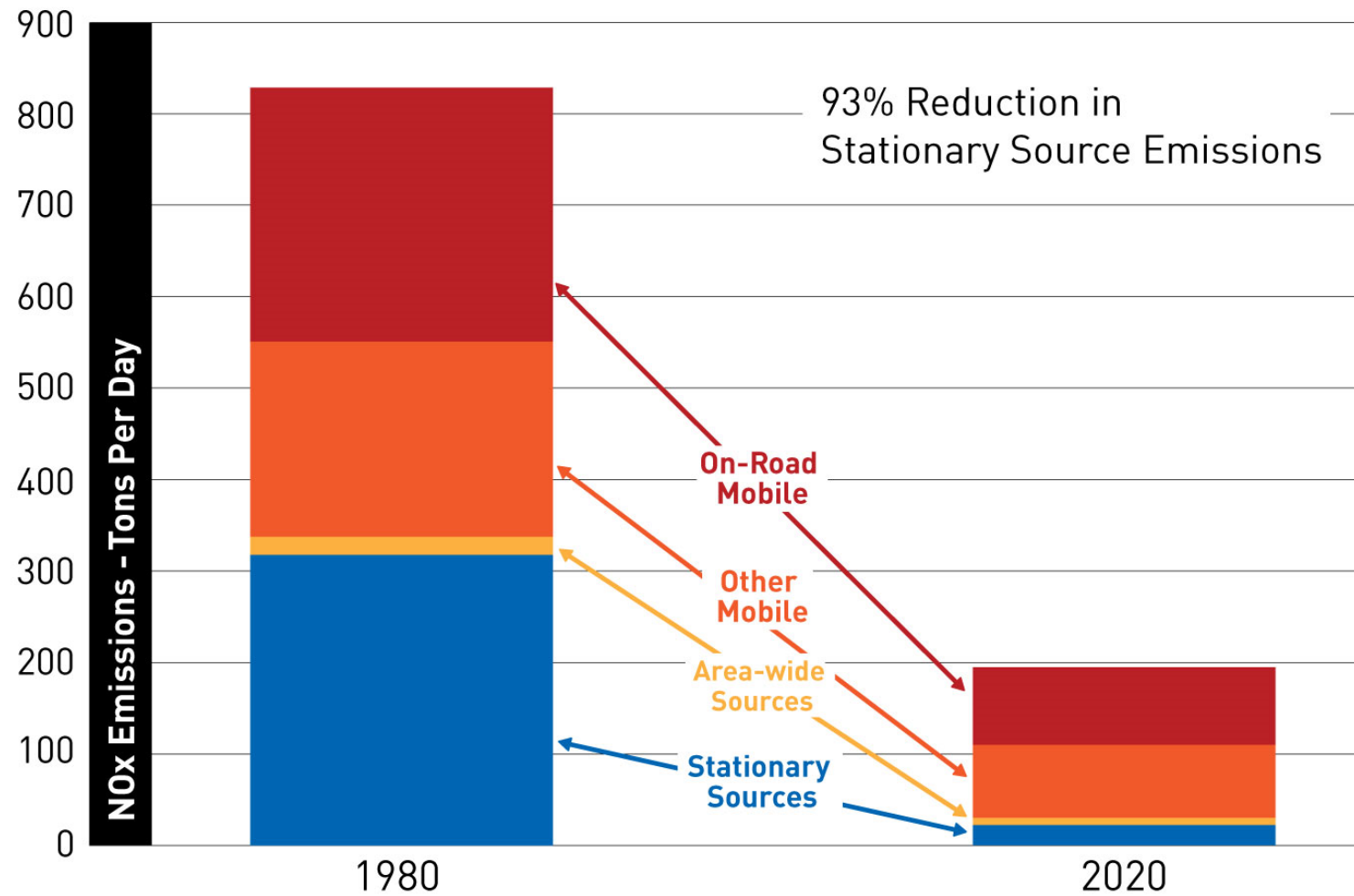


Source: US EPA

Ongoing Valley Clean Air Efforts

- District Governing Board has adopted numerous attainment plans and air quality control strategies to address federal standards
 - Adopted nearly 650 stringent rules and regulations
 - Stationary source emissions reduced by over 90%
- CARB has adopted numerous mobile source emissions control regulations and strategies
- District/CARB combined efforts represent nation's toughest emissions control program
- Strong incentive programs (over \$3.5 billion in public/private investment), reducing 190,000 tons of emissions
- Through significant clean air investments, Valley continues to make major improvements with respect to air quality

Major Reductions in Pollution



Building Upon Previous Attainment Plans

- Numerous attainment plans have been developed and implemented by the District over the last few decades to significantly improve Valley air quality, including:
 - *2003 PM10 Plan*
 - *2007 Ozone Plan for the 1997 8-hour Ozone Standard*
 - *2008 PM2.5 Plan for the 1997 PM2.5 Standard*
 - *2012 PM2.5 Plan for the 2006 PM2.5 Standard*
 - *2013 Plan for the Revoked 1-hour Ozone Standard*
 - *2016 Ozone Plan for the 2008 8-hour Ozone Standard*
 - *2016 Moderate Area Plan for the 2012 PM2.5 Standard*
 - *2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards*

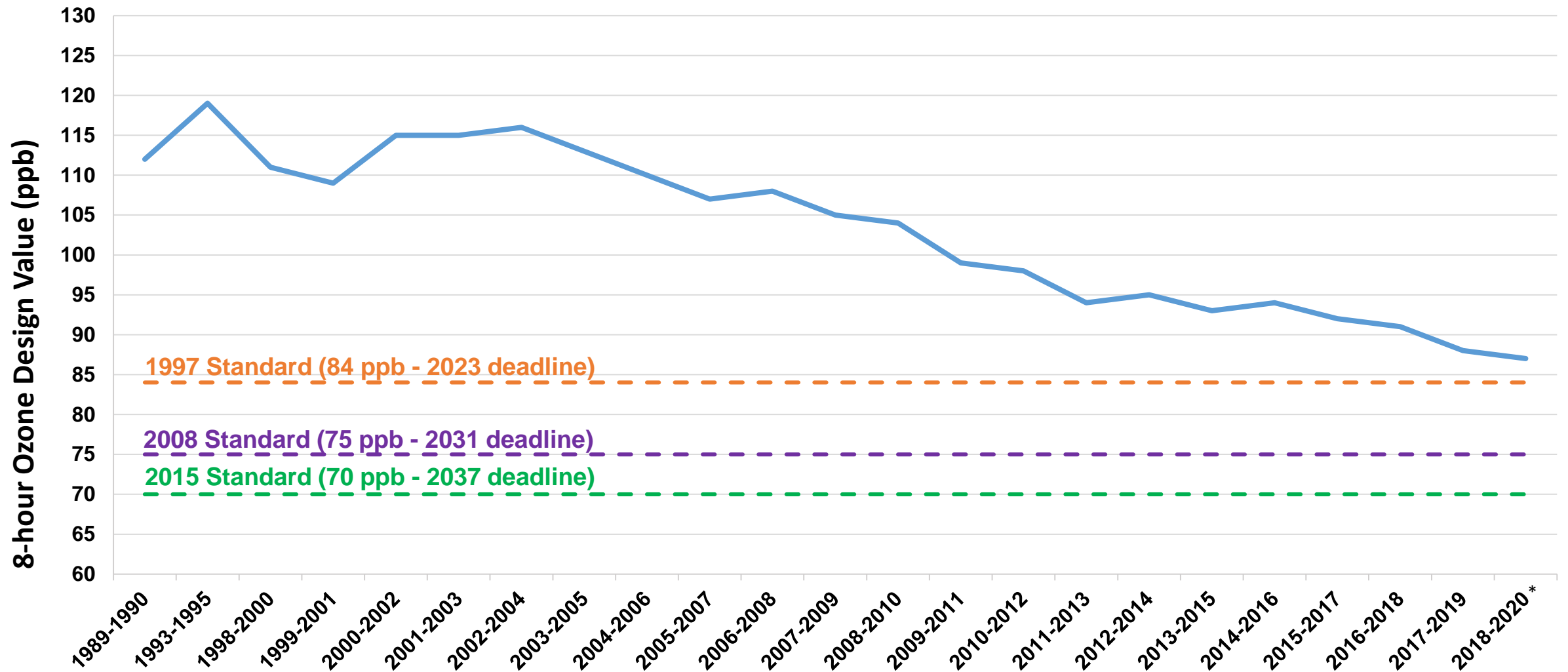
Valley Efforts to Improve Ozone Air Quality

- Ozone air quality challenge primarily during summer season
 - Challenge primarily due to combustion-related NOx emissions trapped on Valley floor due to geography and summer high pressure weather patterns
- District Governing Board has shown commitment in reducing ozone concentrations through approving multiple ozone plans
 - *2013 Ozone Plan* (Valley now meets the 1-hour ozone standard)
 - *2007 Ozone Plan* (included “black box” of unidentified measures, Valley on track to meeting 2023 deadline)
 - *2016 Ozone Plan* (Valley on track to meeting 2031 deadline)
- San Joaquin Valley first and only region in nation classified as “Extreme” nonattainment to reach attainment (1-hour ozone)

Ongoing Valley Ozone Improvements

- Significant investments to reduce air pollution have led to continued improving ozone levels across the Valley
- Compared to past years, Valley has achieved significant reduction in days exceeding the federal ozone standards (excluding 2020 wildfire impacts):
 - Over 90% reduction in days over 84 ppb
 - Over 70% reduction in days over 75 ppb
 - Over 35% reduction in days over 70 ppb
- Over 90% reduction in population exposure to peak ozone values
- In 2020 Valley experienced lowest federal 8-hour ozone “design value” on record (excluding 2020 wildfire impacts)
 - Demonstrates 91% progress towards meeting 84 ppb standard (2023 deadline)

Valley 8-hour Ozone Design Value Trend



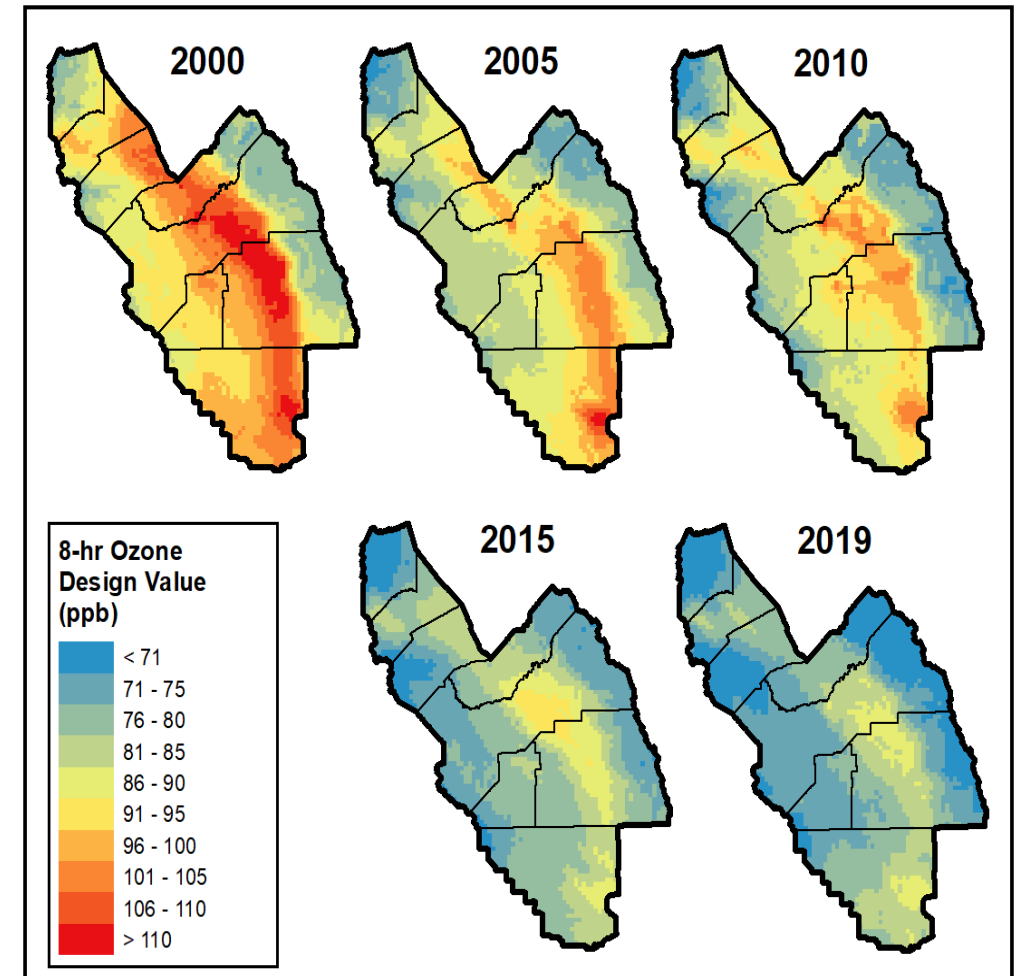
*Year 2020 excludes data impacted by wildfire emissions

Valley on Track to Meet 84 ppb Ozone Standard

- In 2019, CARB took action to approve progress report on Valley's implementation of *2007 Ozone Plan*
- CARB report affirms tremendous progress made in Valley, including findings that:
 - Valley is on track to reach attainment by 2023
 - “Black box” emission reductions are now identified and no further measures necessary to reach attainment
- CARB action submitted to EPA as a revision to the Valley's attainment plan

New Plan Required for 2015 Ozone Standard

- NAAQS reevaluated every 5 years by CASAC (Clean Air Scientific Advisory Committee) based on latest health science
 - 8-hour ozone standards: 1997, 2008, 2015
- October 2015 – EPA lowered 8-hr standard from 75 ppb to 70 ppb
- Valley designated as “Extreme” nonattainment by EPA in 2018
- District required to adopt new Ozone Plan by 2022 with attainment deadline of 2037 (*2022 Ozone Plan*)



Guiding Principles for *2022 Ozone Plan*

- Consistent with recent plans, District utilizing the following Guiding Principles for developing *2022 Ozone Plan*:
 1. With public health as our number one priority, provide for expeditious attainment of federal health-based air quality standards across San Joaquin Valley communities
 2. Use sound science as plan's foundation, including in efforts to assess public health impacts, predict future air quality, determine extent of emissions reductions needed, and evaluate availability, effectiveness, and feasibility of emission control measures
 3. Consider Valley's unique challenges and develop cost-effective strategies that provide adequate operational flexibility and minimize costs to Valley businesses

Guiding Principles for *2022 Ozone Plan* (cont'd)

4. Consider all opportunities for timely, innovative, and cost-effective emission reductions – consider traditional regulations, but look beyond traditional regulations to incorporate clean air incentives, policy initiatives, guidance documents, and outreach
5. Given over 85% of Valley’s NOx emissions originate from mobile sources, provide a balanced approach to reducing mobile and stationary source emissions
6. Devise and implement reasonable strategies that involve the public in reducing emissions
7. Prioritize strategies that contribute to attainment of multiple air quality standards
8. Recognize that there is no “silver bullet” for attainment: every sector—from public through all levels of government, businesses, and industry—must continue to reduce emissions

Guiding Principles for *2022 Ozone Plan* (cont'd)

9. Pursue adequate resources and regulatory assistance from state and federal agencies to reduce emissions from sources under their jurisdiction
10. Pursue zero and near-zero emissions technology demonstration efforts to assist the Valley meet health-based air quality standards as expeditiously as possible
11. Evaluate and address as feasible air pollutant transport impacting Valley
12. Provide ample opportunity for public participation and feedback in design and implementation of plans - utilize planning process to also inform participants of Valley's air quality challenges and successes as well as actions that can be taken to improve Valley air quality

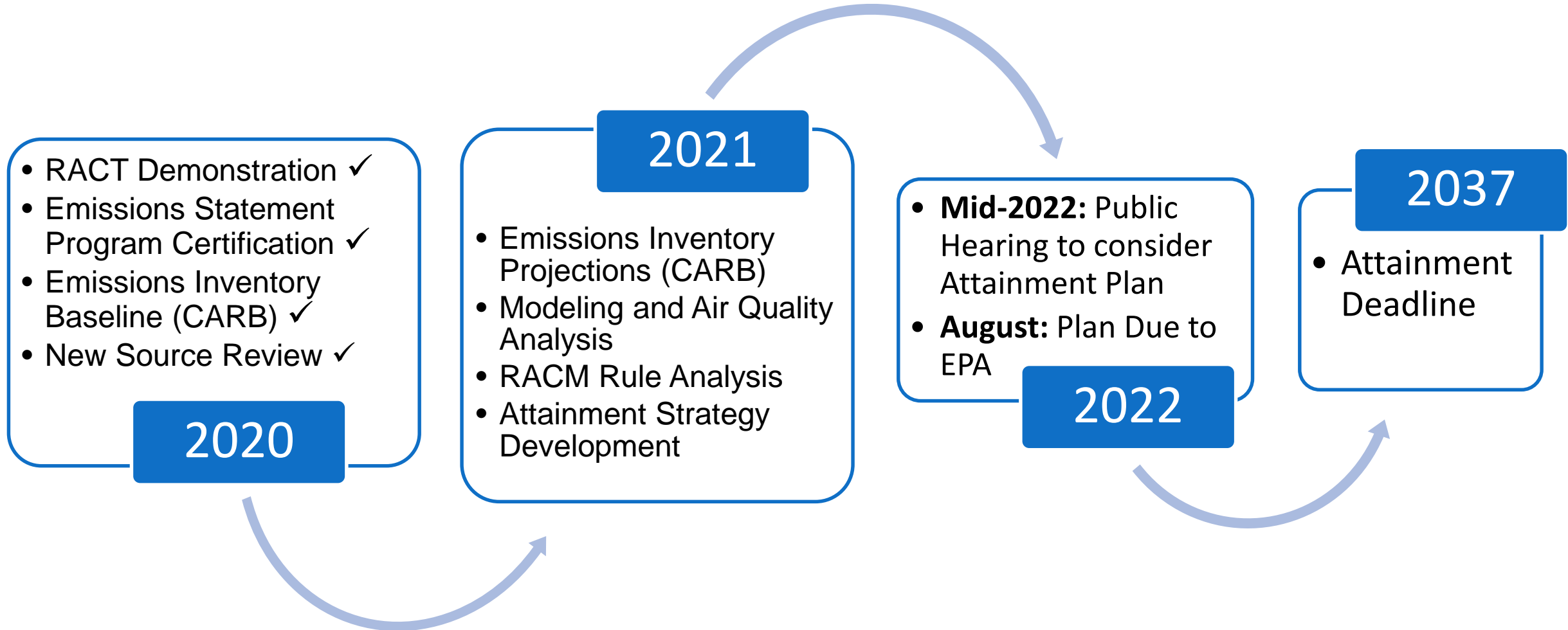
Plan Will be Based on Extensive Scientific Foundation and Analysis

- Many inputs into modeling and analysis for Valley attainment planning derived from San Joaquin Valleywide Air Pollution Study Agency research (CRPAQS, CCOS)
 - Public/private partnership including District, CARB, EPA, Bay Area AQMD, Sac AQMD, stakeholders
 - Over \$60 million in funding through Study Agency
- Central California Ozone Study (CCOS) and California Region Particulate Air Quality Study (CRPAQS)
 - Large regional ozone and PM air quality studies across Valley and surrounding regions
- Resulting dataset supports future attainment plan strategy development for ozone and PM_{2.5}
 - Studied by researchers around the world
 - Hundreds of professional papers published based on analysis of resulting CRPAQS and CCOS data

2022 Ozone Plan

- Despite significant progress, substantial further reductions in NO_x emissions needed to attain new 2015 federal 8-hour ozone standard
- Over 85% of remaining NO_x emissions in Valley come from mobile sources under state and federal jurisdiction
 - Important that continued efforts to reduce emissions from passenger vehicles, heavy duty trucks, locomotives, and other mobile sources be pursued
- *2022 Ozone Plan* will build on existing air quality strategies, and comprehensive NO_x emissions reduction strategies in existing adopted ozone and PM_{2.5} plans will greatly contribute to meeting new ozone standard

Planning Requirements for *2022 Ozone Plan*



Progress in Developing *2022 Ozone Plan*

RACT (Reasonably Available Control Technology) Demonstrations ✓

- RACT, considering technological and economic feasibility, is required at existing sources in nonattainment areas
- Governing Board adopted 2020 RACT Demonstrations in June 2020

Emissions Statement Program Certification ✓

- Federal CAA requires that areas designated as nonattainment of an ozone standard must annually report NO_x and VOC emissions from sources in the area
- District Rule 1160 implements the requirements of the 2015 8-hour ozone standard. Emissions Statement Certification adopted by Governing Board in June 2020

Emissions Inventory Baseline (CARB) ✓

- The statewide emissions inventory, maintained by CARB, is a systematic listing of the sources of air pollution and the amount of pollution emitted from each source or category
- District coordinated with CARB to update District emissions inventory categories and updated inventory being finalized by CARB with District review

New Source Review Program Certification ✓

- District SIP submittal in 2019, confirmed by EPA to satisfy the requirement to certify the program for the 2015 ozone standard

Public Engagement Process

- Planning elements required for the 2015 8-hour ozone standard will be developed through extensive public process
- Clear and effective public engagement processes will be critical to reducing potential confusion about overlapping efforts required by state and federal mandates
 - Critical as District works concurrently on *2022 Ozone Plan* development, *2018 PM2.5 Plan* implementation, and BARCT reviews
- District staff will present updates about plan development:
 - Public workshops and technical workgroup meetings
 - Governing Board, Citizen Advisory Committee (CAC), Environmental Justice Advisory Group (EJAG) meetings
 - AB 617 community steering committees

2022 Ozone Plan Development Schedule

Tentative Date	Upcoming Topics
April 2021	Public Workshop: General background of Plan requirements and development process
2 nd Q 2021	Technical Working Group Public Meeting: Emissions inventory and modeling
3 rd Q 2021	Technical Working Group Public Meeting(s): Stationary Source measures, Mobile Source measures
4 th Q 2021	Technical Working Group Public Meeting(s): Updates on strategy development; modeling analysis; RACM demonstration
1 st Q 2022	Technical Working Group Public Meeting: Share draft plan strategy and final modeling results
1 st Q 2022	Publish initial chapters and appendices of Plan for public review
1 st Q 2022	Public Workshop: Review of proposed attainment plan
May 2022	Publish proposed plan for 30-day public review/comment
June 2022	Public Hearing: for Governing Board to consider adoption of proposed plan

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Comments/Questions

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